

APPLICATION FOR UNITED STATES PATENT

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Invention: SOFTWARE SYSTEM FOR QUANTITATIVE MEASUREMENT OF
ACCOUNTABILITY OF SOCIAL SERVICES

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SOFTWARE SYSTEM FOR QUANTITATIVE MEASUREMENT OF ACCOUNTABILITY OF SOCIAL SERVICES

BACKGROUND OF THE INVENTION

The present invention derives priority from U.S. Provisional Patent Application 60/239,770 entitled "SOFTWARE SYSTEM FOR QUANTITATIVE MEASUREMENT AND ACCOUNTABILITY OF SOCIAL SERVICES", filed: October 12, 2000.

BACKGROUND OF THE INVENTION

1. Field of the invention

The present invention relates to a social service case management and, more particularly, to a method for the tracking and assessment of social services data in a knowledge base that provides quantitative accountability for social services based on reduction of barriers. The method is implemented in software form with a navigable user interface.

2. Description of the Background

State legislatures are pressuring agencies to become more efficient in the delivery of social services. Unfortunately, while many agencies excel at providing quality services, there is currently very little that an agency can do to quantitatively assess the effectiveness of its counselors. Surveys have been completed which show that counselors do very little evaluation of their work with clients, and as many as 40% of counselors report doing no evaluation. When evaluation is done, it tends to be with the client in the session by asking the client if the session

5 was helpful. No quantitative assessment is made of the impact of counseling on the client's situation. Consequently, there is currently no reliable way for an agency to assess the effectiveness of its counselors, or just as important, for counselors to quantify their performance to their agencies. Previously, managers and consultants did not place a high priority on evaluating counseling effects. However, funding pressures are emphasizing the need for efficiency, and that is forcing the need for assessment. Indeed, counselors are beginning to see that without data to attest to their successes, their jobs are vulnerable. Survey results indicate that up to 42% of counselors do not know to what extent their supervisors' expectations were being met. This presents a high risk that program administrators may assume that counseling is not necessary. Counselors need to become more active at marketing what they do and the results they achieve (i.e., the nature of service, nature of program, results of evaluation). They know this and yet can do nothing about it. Unfortunately, there is no generally-accepted method of collecting and evaluating counseling data. Few models exist for evaluating the actual effects of counseling, and Counselors and managers need a functional assessment approach. The present inventor has found that it is possible to map barriers to client progress. For example, in career counseling, clients have specific "barriers" to productivity including: a lack of belief in self; low motivation to change; belief that potential for success is low; finances (especially for clients in colleges and CECs); family responsibilities (especially for clients in college or working mothers); and unemployment. It is possible to map the major career-related problems within the context of the client's life. Given the barriers to success, the Counselors can be more prepared to work with clients to help them overcome the barriers they face. This improves the Counselor's effectiveness and efficiency. More importantly for the present purposes, it provides a foothold

5 for objective assessment: a model for evaluating the actual effects of counseling based on
reducing or eliminating barriers. It would therefore be greatly advantageous to provide a method
and means for assessing social service case workers based on an objective prioritized mapping of
barriers to client progress. It would also be advantageous to implement this new form of
evaluation model as software in a distributed computing environment to increase visibility and
10 use across at all levels in the organization, with supervisors sharing their evaluations with
workers and vice versa. This would help to ensure an integrated approach to service delivery.

Currently, there are many existing systems for electronic storage and retrieval of
information that are specially adapted in certain respects to various industries. For example,
Key-word search engines like Pubmed® allow users to find articles based on Boolean
combinations of MESH headings, author, or keyword string searches. These are currently not
well-adapted for social service case management because the data is so highly subjective and is
scattered across heterogeneous databases that are difficult to link and query. Consequently,
there is a need to develop a better system for the storage, retrieval and interpretation of case
management information, based on the barrier-mapping model, in order to track and help
20 achieve optimal clinical and financial patient outcomes.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a software method for the
storage and querying of social service data on the basis of defined social services, general
25 customer demographics, specific customer biographical data, and defined outcomes.

It is another object to provide a system to help manage and coordinate resources for the

5 achievement of optimal clinical and financial patient outcomes, and to facilitate collaborative patient care management across the continuum of available social services.

It is another object to assist in developing, implementing, revising and reporting activities related to any case management program.

10 It is another object to record information about social-service clients in a database that can be accessed by multiple users at one or more sites.

According to the present invention, these and other objects are accomplished by providing a system for social service case management tat facilitates storage and querying of social services data in a knowledge base that provides quantitative accountability for social services via a navigable user interface. The method includes the tracking and assessment of social services based on a defined list of client barriers to success, and it then objectively tracks progress of the social worker based on the reduction and/or elimination of those barriers. The invention also comprises an implementation of the foregoing method in software form which facilitates the guided compilation of a knowledge base that quantifies the barriers to success, facilitates objective tracking of progress toward the reduction and/or elimination of those
20 barriers, and which generates tangible results by structured querying of the knowledge base and generation of evaluate progress. The collected information is incorporated into a structured relational database whereby storage tables are inter-related by one or more shared fields. All of the foregoing method steps are administered to and by the social worker using a navigable user interface. The graphical user interface includes a plurality of single-click buttons each for
25 initiating a pre-determined SQL query for allowing a user to generate a report for maintaining quantitative accountability for social services. The software method is combined with suitable

5 hardware for implementation of the entire system. The hardware may include a conventional computer workstation with standard internal components such as a microprocessor with peripheral chipset mounted on an appropriate motherboard, storage, a monitor, a modem, a standard input device such as a mouse, and an operating system such as Microsoft Windows.

10 BRIEF DESCRIPTION OF THE DRAWINGS

Other objects, features, and advantages of the present invention will become more apparent from the following detailed description of the preferred embodiment and certain modifications thereof when taken together with the accompanying drawings in which:

FIG. 1 is a flow chart illustrating the general method steps according to the present invention.

FIG. 2 is a screen print of an exemplary "Add Participant" screen.

FIG. 3 is a screen print of an exemplary "Participant Demographics" screen.

FIG. 4 is a screen print of an exemplary Progress Element (or Record Efforts) entry/update screen.

20 FIG. 5 is a screen print of an exemplary Barrier entry/update screen

FIG. 6 is a screen print of an exemplary "Update Participant Previous Employment" screen.

FIGs. 7A-7C are a tabular listing of the preferred relational links between fields in the above described knowledgebase tables.

25 FIG. 8 is a screen print of an exemplary Basic Client Information Report profiling a given client.

5 FIG. 9 is a screen print of an exemplary caseworker report with total client contact information for a given caseworker.

FIG. 10 is a screen print of an exemplary Barrier statistics report.

FIG. 11 is an example "Efforts to Outcomes" report.

FIG. 12 is an example "Barrier Reduction Report" report.

10 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

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The present invention is a method for the tracking and assessment of social services based on defining client barriers to success and then objectively tracking progress of the social worker based on the reduction and/or elimination of those barriers. The invention also comprises an implementation of the foregoing method in software form which facilitates the guided compilation of a knowledge base that quantifies the barriers to success, facilitates objective tracking of progress toward the reduction and/or elimination of those barriers, and which generates tangible results by structured querying of the knowledge base and generation of evaluate progress. All of the foregoing steps are administered to the social worker by a
20 navigable user interface.

The basic method of the present system in this context are based on a model involving five specific categories of information regarding: 1) the social service provider, 2) the client, 3) client barriers to success inclusive of severity, 4) client outcome, and 4) general demographic data. FIG. 1 is flow chart illustrating the general method steps according to the present
25 invention.

At step 100 the agency and/or individual case managers enter baseline information for each case worker inclusive of basic identifier information such as LastName, FirstName, Case Worker ID#, Employment Date, Position, and other informational fields as desired.

At step 200 the individual case manager, once assigned to a client, enters baseline client information regarding each client inclusive of social security number, name address, ethnicity, gender, etc. Basic client data is used to populate a relational database table as shown below.

"Clients" Table

Name	Datatype	Null Option	Is PK	Is FK
SSN	varchar(11)	NOT NULL	Yes	No
FirstName	varchar(20)	NOT NULL	No	No
MiddleInitial	char(1)	NULL No	No	No
LastName	varchar(40)	NOT NULL	No	No
OtherPhone	varchar(50)	NULL No	No	No
PhoneNumber	char(20)	NULL No	No	No
Address1	varchar(50)	NULL No	No	No
Address2	varchar(50)	NULL No	No	No
City	varchar(30)	NULL No	No	No
State	char(2)	NULL No	No	No
ZipCode	char(5)	NULL No	No	No
Ethnicity	smallint	NULL No	Yes	No
Gender	varchar(50)	NULL No	Yes	No
ClientDOB	smalldatetime	NULL No	No	No
MaritalStatus	smallint	NULL No	Yes	No
NonCustodialParent	bit	NULL No	No	No
TCAExhaustee	bit	NULL No	No	No
LanguageSpoken	varchar(30)	NULL No	No	No
SourceOfIncome	smallint	NULL No	Yes	No
I9SocialSecurityCard	bit	NULL No	No	No
I9BirthCertificate	bit	NULL No	No	No
I9DriverLicense	bit	NULL No	No	No
I9LicenseNumber	varchar(30)	NULL No	No	No
I9LicenseType	smallint	NULL No	Yes	No
EducationGoal	varchar(50)	NULL No	No	No
EducationHighestGradeAttended	smallint	NULL No	No	No
EducationLastYearInSchool	datetime	NULL No	No	No
GED	bit	NULL No	No	No
EducationProjectedGEDDate	datetime	NULL No	No	No
ProfessionalLicenses	varchar(50)	NULL No	No	No
MilitaryServiceEntry	datetime	NULL No	No	No
MilitaryServiceDischarge	bit	NULL No	No	No
MilitaryServiceDischargeType	smallint	NULL No	Yes	No
MilitaryBranch	smallint	NULL No	Yes	No
MilitaryDischargeDate	datetime	NULL No	No	No
CriminalFelonyConviction	bit	NULL No	No	No
CriminalMisdemeanorConviction	bit	NULL No	No	No

5	CriminalCivilCase	bit	NULL	No	No
	CriminalDateOfLastOffense	smalldatetime	NULL	No	No
	CriminalDispositionType	smallint	NULL	No	Yes
	CriminalProbation	bit	NULL	No	No
	CriminalBackgroundCheck	bit	NULL	No	No
10	EmploymentFOF	smallint	NULL	No	Yes
	EmploymentShortTermGoal	varchar(100)	NULL	No	No
	EmploymentTrainingNeeded	text	NULL	No	No
	EmploymentTrainingCompleted	text	NULL	No	No
15	ReliableName	varchar(50)	NULL	No	No
	ReliableNumber	varchar(50)	NULL	No	No
	ReliableCity	varchar(50)	NULL	No	No
	ReliableState	varchar(2)	NULL	No	No
	ReliableZip	varchar(5)	NULL	No	No
	ReliableRelationship	varchar(30)	NULL	No	No
20	SocialWorkName	varchar(50)	NULL	No	No
	SocialWorkNumber	varchar(30)	NULL	No	No
	SocialWorkLocation	varchar(30)	NULL	No	No
	PhoneNumber2	char(20)	NULL	No	No
25	EmployeeIDOriginal	smallint	NULL	No	No

FIG. 2 is a screen print of an exemplary "Add Participant" screen by which the caseworker is guided to add a new client and to enter basic details such as Name, SSN, PhoneNumber, and Date of Birth into the above table.

FIG. 3 is a screen print of an exemplary "Participant Demographics" screen by which the caseworker is guided to add client particulars. Previously entered data appears in the screen and additional data as shown can be entered into the relevant fields per the above table.

In addition to basic client data, subordinate client data is entered by a succession of like screens and is used to populate a series of related tables. Preferably, in the context of employment placement, the subordinate data will include relevant information on the client's children, drug addictions, criminal dispositions, employment history, license types, military history, test scores, marital status, medical benefits availability, prior placements (including rejections), program outcomes, referral sources, and other data as desired. The following are an exemplary set of table definitions for storing this subordinate data.

5	"ChildRelationshipType" Table						
	Name	Datatype	Null Option	Is PK	Is FK		
	ChildRelationshipID	smallint	IDENTITY	Yes	No		
	ChildRelationship	varchar(50)	NULL No	No			
10	"Choice" Table						
	Name	Datatype	Null Option	Is PK	Is FK		
	Choice	varchar(10)	NOT NULL	No	No		
	ChoiceID	smallint	NOT NULL	No	No		
15	"ClientAddictions" Table						
	Name	Datatype	Null Option	Is PK	Is FK		
	SSN	varchar(11)	NOT NULL	Yes	Yes		
	AddictionID	smallint	IDENTITY	Yes	Yes		
	AddictionHistory	smallint	NULL	No	No		
20	LenghtOfDrugUser	varchar(30)	NULL	No	No		
	DateOfLastUser	smalldatetime	NULL	No	No		
	DrugTested	bit	NULL	No	No		
	DateOfDrugTest	smalldatetime	NULL	No	No		
	DrugTestResult	varchar(50)	NULL	No	No		
25	RecoveryInfo	varchar(50)	NULL	No	No		
	"ClientChildren" Table						
	Name	Datatype	Null Option	Is PK	Is FK		
	SSN	varchar(11)	NOT NULL	Yes	Yes		
30	ChildFirstName	varchar(20)	NOT NULL	Yes	No		
	ChildLastName	varchar(40)	NOT NULL	Yes	No		
	ChildDOB	smalldatetime	NULL	No	No		
	ChildRelationship	smallint	NULL	No	Yes		
35	"ClientCriminalDisposition" Table						
	Name	Datatype	Null Option	Is PK	Is FK		
	CriminalDisposition	varchar(30)	NOT NULL	No	No		
	CriminalDispositionID	smallint	IDENTITY	Yes	No		
40	"ClientEmployment" Table						
	Name	Datatype	Null Option	Is PK	Is FK		
	PlacementID	smallint	NOT NULL	Yes	No		
	DateEntered	datetime	NOT NULL	Yes	No		
	EmployerID	smallint	NOT NULL	No	Yes		
45	TerminationDate	smalldatetime	NULL	No	No		
	JobTitle	varchar(50)	NULL	No	No		
	HourlyWage	money	NULL	No	No		
	HoursPerWeek	smallint	NULL	No	No		
	MedicalBenefitsAvailabilityID	smallint	NULL	No	Yes		
50	FringeBenefitsAvailable	bit	NULL	No	No		
	CoveredByUnemploymentInsurance	bit	NULL	No	No		
	EmploymentStatus	smallint	NOT NULL	Yes	Yes		
	DOTCode	varchar(30)	NULL	No	No		
	CompletedProbation	bit	NULL	No	No		
55	StartDate	datetime	NULL	No	No		

"ClientEmploymentFOFTypes" Table

5	Name	Datatype	Null Option	Is PK	Is FK
	EmploymentFOF	varchar(50)	NOT NULL	No	No
	EmploymentFOFID	smallint	IDENTITY	Yes	No
10	"ClientI9LicenseTypes" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	I9LicenseType	varchar(30)	NOT NULL	No	No
	I9LicenseTypeID	smallint	IDENTITY	Yes	No
15	"ClientMilitaryDischargeTypes" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	MilDischargeTypeID	smallint	NOT NULL	Yes	No
	MilDischargeType	varchar(30)	NULL No	No	
20	"ClientPreviousEmployment" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	SSN	varchar(11)	NOT NULL	Yes	No
	Company	varchar(50)	NULL No	No	
	JobTitle	varchar(30)	NULL No	No	
	StartDate	datetime	NOT NULL	Yes	No
25	EndDate	datetime	NULL No	No	
	HourlyRate	money	NULL No	No	
	HoursPerWeek	smallint	NULL No	No	
	ReasonForLeaving	varchar(50)	NULL No	No	
30	"ClientSourceOfIncome" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	SourceOfIncome	varchar(50)	NOT NULL	No	No
	SourceOfIncomeID	smallint	IDENTITY	Yes	No
35	"ClientTestScores" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	SSN	varchar(11)	NOT NULL	Yes	Yes
	TestDate	smalldatetime	NOT NULL	Yes	No
	DateEntered	datetime	NOT NULL	No	No
40	Score	numeric(5,2)	NULL	No	No
	EmployeeID	smallint	NULL	No	No
	TestType	varchar(50)	NOT NULL	Yes	Yes
45	"Employers" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	EmployerID	smallint	IDENTITY	Yes	No
	Name	varchar(50)	NOT NULL	No	No
	Address1	varchar(50)	NULL No	No	
	Address2	varchar(50)	NULL No	No	
50	City	varchar(30)	NULL No	No	
	State	char(2)	NULL No	No	
	ZipCode	char(5)	NULL No	No	
	ContactName	varchar(30)	NULL No	No	
	ContactNumber	varchar(30)	NULL No	No	
55	Commitment	varchar(30)	NULL No	No	
	RateOfPay	varchar(30)	NULL No	No	
	Benefits	varchar(30)	NULL No	No	

5	EmployerMatch	varchar(30)	NULL	No	No
	"EmploymentStatuses" Table				
	Name	Datatype	Null Option	Is PK	Is FK
10	EmploymentStatus	varchar(50)	NOT NULL	No	No
	EmploymentStatusID	smallint	IDENTITY	Yes	No
	"Ethnicities" Table				
	Name	Datatype	Null Option	Is PK	Is FK
15	Ethnicity	varchar(20)	NOT NULL	No	No
	EthnicityID	smallint	IDENTITY	Yes	No
	"Genders" Table				
	Name	Datatype	Null Option	Is PK	Is FK
20	Gender	varchar(50)	NOT NULL	Yes	No
	"MaritalStatuses" Table				
	Name	Datatype	Null Option	Is PK	Is FK
25	MaritalStatus	varchar(50)	NOT NULL	No	No
	MaritalStatusID	smallint	IDENTITY	Yes	No
	"MedicalBenefitsAvailability" Table				
	Name	Datatype	Null Option	Is PK	Is FK
30	MedicalBenefitsAvailabilityID	smallint	IDENTITY	Yes	No
	MedicalBenefitsAvailability	varchar(50)	NOT NULL	No	No
	"Messages" Table				
	Name	Datatype	Null Option	Is PK	Is FK
35	MessageID	smallint	IDENTITY	Yes	No
	MessageType	smallint	NULL	No	No
	MessageText	text	NULL	No	No
	MessageDateStart	datetime	NULL	No	No
	MessageDateEnd	datetime	NULL	No	No
	EmployeeID	smallint	NULL	No	Yes
40	"MilitaryBranch" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	MilitaryBranchID	smallint	IDENTITY	Yes	No
	MilitaryBranch	varchar(30)	NOT NULL	No	No
45	"PlacementRejectionReasons" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	PlacementRejectionReason	varchar(30)	NOT NULL	No	No
	RejectionReasonID	smallint	IDENTITY	Yes	No
50	Notes	text	NULL	No	No
	"Placements" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	PlacementID	smallint	IDENTITY	Yes	No
55	SSN	varchar(11)	NOT NULL	Yes	No
	PlacementDate	smalldatetime	NOT NULL	Yes	No
	ScheduledStartDate	smalldatetime	NOT NULL	No	No
	EmployeeID	smallint	NOT NULL		No

5	Notes	text	NULL	No	No
	ProgramID	smallint	NULL	No	Yes
	PlacementType	smallint	NULL	No	Yes
	ReferralSource	smallint	NULL	No	Yes
	RejectionReason	smallint	NULL	No	Yes
10	OpenToPlace	bit	NULL	No	No
	OpenToPlaceDate	datetime	NULL	No	No

"PlacementTypes" Table

15	Name	Datatype	Null Option	Is PK	Is FK
	PlacementTypeID	smallint	IDENTITY	Yes	No
	PlacementType	varchar(30)	NOT NULL	No	No

"PreviousEmploymentReasonForLeaving" Table

20	Name	Datatype	Null Option	Is PK	Is FK
	ReasonForLeaving	varchar(50)	NOT NULL	No	No
	ReasonForLeavingID	smallint	IDENTITY	Yes	No

"ProgramOutcomes" Table

25	Name	Datatype	Null Option	Is PK	Is FK
	PlacementID	smallint	NOT NULL	Yes	No
	DateEntered	datetime	NOT NULL	No	No
	EmpID	smallint	NOT NULL	No	No
	ProgramHours	decimal(10,2)	NOT NULL	No	No
	DateWorked	datetime	NOT NULL	Yes	No
30	Notes	text	NULL	No	No
	WorkActivityType	smallint	NOT NULL	Yes	Yes

"Programs" Table

35	Name	Datatype	Null Option	Is PK	Is FK
	ProgramID	smallint	IDENTITY	Yes	No
	Address1	varchar(50)	NULL	No	No
	Address2	varchar(50)	NULL	No	No
	City	varchar(30)	NULL	No	No
	State	char(2)	NULL	No	No
40	ZipCode	char(5)	NULL	No	No
	ProgramType	varchar(50)	NULL	No	Yes
	ProgramName	varchar(75)	NOT NULL	No	No
	Disabled	bit	NOT NULL	No	No

"ProgramTypes" Table

45	Name	Datatype	Null Option	Is PK	Is FK
	ProgramType	varchar(50)	NOT NULL	Yes	No
	Notes	text	NULL	No	No

"ReferralSources" Table

50	Name	Datatype	Null Option	Is PK	Is FK
	ReferralSourceID	smallint	IDENTITY	Yes	No
	ReferralSource	varchar(30)	NOT NULL	No	No

Column(s) of "Roles" Table "Roles" Table

55	Name	Datatype	Null Option	Is PK	Is FK
	Role	varchar(50)	NOT NULL	Yes	No

5	Notes	text	NULL	No	No
	"TestTypes" Table				
	Name	Datatype	Null Option	Is PK	Is FK
10	TestType	varchar(50)	NOT NULL	Yes	No
	Notes	text	NULL	No	No
	"WorkActivityTypes" Table				
	Name	Datatype	Null Option	Is PK	Is FK
15	WorkActivityType	varchar(50)	NOT NULL	No	No
	WorkActivityTypeID	smallint	IDENTITY	Yes	No

At step 300 the individual case manager, after interviewing a particular client, enters goal-oriented information regarding progress elements (points for improvement) as well as social barriers faced by the client in accomplishing predefined social goals.

For goal-oriented progress elements, the caseworker enters status information to a predefined categorical list of Progress Elements. Again in the context of employment placement, exemplary Progress Elements may include Retention; New Employment; Wage Increase; Promotion; and Educational Advancement. In addition to measuring the client's progress, the caseworkers must also measure their own effort towards each progress element. This is important because it avoids vague "checkups" on clients when they have employment and helps the caseworkers focus their energies on aiding clients' progress towards specific goals. FIG. 4 is a screen print of an exemplary Progress Element entry screen by which the caseworker can specify a Progress Element (career path/employment planning), and enter contact information (location, time, date of next update and notes) regarding their own effort toward facilitating the specified Progress Element. By this approach, caseworker efforts can be measured against the outcomes produced. The periodic client contact data is used to populate relational database tables as shown below.

"ClientUpdateReasons" Table

5	Name	Datatype	Null Option	Is PK	Is FK
	ReasonID	smallint	IDENTITY	Yes	No
	Reason	varchar(100)	NULL	No	No
	Notes	text	NULL	No	No
10	"ClientUpdates" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	ClientUpdateID	int	IDENTITY	Yes	No
	PlacementID	smallint	NOT NULL	Yes	No
	EmployeeID	smallint	NOT NULL	Yes	Yes
15	ClientUpdateReasonID	smallint	NULL	No	Yes
	Notes	text	NULL	No	No
	DateEntered	smalldatetime	NULL	No	No
20	"ContactLocations" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	ContactLocation	varchar(40)	NOT NULL	No	No
	ContactLocationID	smallint	IDENTITY	Yes	No
	Notes	text	NULL	No	No
25	"ContactTypes" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	ContactTypeID	int	IDENTITY	Yes	No
	ContactType	varchar(50)	NOT NULL	No	No
30	"DrugOfChoice" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	DrugID	smallint	IDENTITY	Yes	No
	DrugOfChoice	varchar(30)	NOT NULL	No	No
35	"EmployeeMessage" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	EmployeeID	smallint	NULL	No	Yes
	EmployeeMessageID	int	IDENTITY	Yes	No
	MessageID	smallint	NULL	No	Yes
40	ReadMessage	smallint	NULL	No	No
	"Employees" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	EmployeeID	smallint	IDENTITY	Yes	No
45	ProgramID	smallint	NULL	No	Yes
	FirstName	varchar(20)	NOT NULL	No	No
	MiddleInitial	char(1)	NULL	No	No
	LastName	varchar(40)	NOT NULL	No	No
	EmployeeType	varchar(30)	NULL	No	Yes
50	Role	varchar(50)	NULL	No	Yes
	Disabled	bit	NOT NULL	No	No
	UserName	varchar(50)	NOT NULL	No	No
	Password	varchar(50)	NOT NULL	No	No
55	"EmployeeTypes" Table				
	Name	Datatype	Null Option	Is PK	Is FK
	EmployeeType	varchar(30)	NOT NULL	Yes	No

5	Notes	text	NULL	No	No
	"EmployerContactLocation" Table				
	Name	Datatype	Null Option	Is PK	Is FK
10	EmployerContactLocation	varchar(40)	NOT NULL	No	No
	Notes	text	NULL	No	No
	EmployerContactLocationID	smallint	IDENTITY	Yes	No
	"EmployerContactType" Table				
	Name	Datatype	Null Option	Is PK	Is FK
15	EmployerContactTypeID	int	IDENTITY	Yes	No
	EmployerContactType	varchar(50)	NOT NULL	No	No
	"EmployerHistories" Table				
	Name	Datatype	Null Option	Is PK	Is FK
20	EmployerID	smallint	NOT NULL	No	Yes
	HistoryID	int	IDENTITY	Yes	No
	DateEntered	datetime	NULL	No	No
	EmployeeID	smallint	NULL	No	No
	TimeSpentOnContact	int	NULL	No	No
25	ContactLocationID	smallint	NULL	No	Yes
	ContactTypeID	int	NULL	No	Yes
	NextExpectedUpdate	datetime	NOT NULL	No	No
	Notes	text	NULL	No	No

In addition to the Progress Element data, the data entry screen of FIG. 5 is used to specify Barriers to progress (such as Literacy), to specify Barrier Severity, and to enter contact information (location, time, date of next update and notes) regarding their own effort at each client contact toward *reducing* the specified Barrier severity or eliminating the Barrier completely. The periodic Barriers data is used to populate a relational database table as shown below.

	"ClientHistories" Table				
	Name	Datatype	Null Option	Is PK	Is FK
40	ClientHistoryID	smallint	IDENTITY	Yes	No
	ClientBarrierID	smallint	NULL	No	Yes
	DateRecorded	smalldatetime	NOT NULL	No	No
	EmployeeID	smallint	NOT NULL	No	Yes
	Note	text	NULL	No	No
	BarrierSeverityID	smallint	NULL	No	Yes
45	TimeSpentOnContact	smallint	NOT NULL	No	No
	DateNextUpdate	smalldatetime	NULL	No	No
	SSN	varchar(11)	NOT NULL	No	Yes
	ContactLocationID	smallint	NOT NULL	No	Yes

5 ContactTypeID int NULL No Yes

In the context of employment placement, an exemplary set of predefined Barriers will include Day Care (whether the client requires day care for dependants); Transportation (whether the client requires transportation to/from work); Health Issues; Family Issues (e.g., divorce situation); Behavior (behavioral issues); Attitude; Weight; Personal Hygiene, Disability, Laziness; Money Management; Lack of Skills; and Literacy. Specific barriers may be defined and added to the knowledge base by the agency or caseworker, and are preferably supplemented by the individual case managers as they know best what stands in the way of their clients' success. The method also requires the subjective (but quantitative) identification of the severity of these barriers. Each barrier is assigned a BarrierID number, and the corresponding severity is identified by a SeverityID field which may be a scale of from 1 (lowest severity) to 10 (most severe). This assessment and definition of barriers allows them to be tracked, overcome and eventually closed by the caseworker. The barrier data is used to populate a relational database table a complete example of which is shown below.

20 "ClientBarriers" Table

Name	Datatype	Null Option	Is PK	Is FK
ClientBarrierID	smallint	IDENTITY	Yes	No
BarrierID	smallint	NOT NULL	No	Yes
SSN	varchar(11)	NOT NULL	No	Yes
BarrierIdentification Date	smalldatetime	NULL	No	No
BarrierClosed	bit	NULL	No	No

The barrier severity data is used to populate a separate table as shown below.

"BarrierSeverities" Table

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Name	Datatype	Null Option	Is PK	Is FK
BarrierSeverityID	smallint	IDENTITY	Yes	No
BarrierSeverity	varchar(50)	NOT NULL	No	No

5 BarrierSeverityValue smallint NOT NULL No No

In the software implementation, procedures are defined which enable the caseworker to define new client barriers, or to recall previously defined client barriers that already exist in the knowledgebase. An example procedure for adding a new barrier is as shown below, and predefined barriers are recalled based on the numeric BarrierID field.

spAddClientBarriers	<pre> CREATE PROCEDURE [spAddClientBarriers] (@BarrierID [smallint], @SSN [varchar](11), @EmpID smallint, @SeverityID smallint, @ContactLoc smallint, @Time smallint, @Update smalldatetime, @Note text) AS Declare @NewCBID smallint INSERT INTO [ClientBarriers] ([BarrierID], [SSN]) VALUES (@BarrierID, @SSN) set @NewCBID = @@Identity Insert Into ClientHistories (ClientBarrierID, SSN, EmployeeID, BarrierSeverityID, ContactLocationID, TimeSpentOnContact, DateNextUpdate, Note) Values (@NewCBID, @SSN, @EmpID, @SeverityID, @ContactLoc, @Time, @Update, @Note) </pre>
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5 Once the caseworker, client, and client contact data (including progress elements and barriers) is entered as per steps 100-300, at step 400 the caseworker continues periodic client contact and at each point of contact reassesses the client.

 At this point, a succession of information update screens are provided to enable the caseworker to update client information which may have changed since the last contact. For example, FIG. 6 is a screen print of an "Update Previous Employment" screen by which the caseworker can update the client's employment history to reflect a change of employment. Additionally, the caseworker can return to the Progress entry screen of FIG. 4 and provide a progress update based on a new client contact, and/or return to the Barrier entry screen of FIG. 5 to update progress or even close out a Barrier to progress which has been overcome.

 All of the foregoing tables are relationally-linked. FIGs. 7A-7C are a tabular listing of the preferred relational links between fields in the above described knowledgebase tables. A Relationship Name is given to each link, and the parent-child hierarchy is designated by the Parent Table Name and Child Table Name. The Column designation indicates the field-to-field assignments between common fields in related tables. All table data is stored in memory pursuant to the above-described storage structure in relational database format and thereby supports meaningful queries. Specifically, the method and data structure allows measurement of the efforts of caseworkers over time. In particular, one objective benchmark is provided by querying the client, caseworker and barrier data to measures the severities of barriers as caseworkers work against them (with clients) over time. This way, it is possible to assess how effective caseworkers are in reducing barriers over time. Another objective benchmark is provided by querying the client, caseworker and contact data to measure caseworker effects in

5 specific contact types over time. These contact types are mapped to outcome indicators (like promotions) and it becomes possible to assess how effective caseworker are when their contact types (efforts) lead to desired outcomes.

Given a fully populated database as per steps 100-400, the caseworker and/or agency may initiate a reporting module as shown at step 500 which provides access to a predefined
10 series of queries. The results of each query are displayed in a format conducive to the recipient of the information.

A series of "Other Reports" can be generated for simple information. For example, a Basic Client Information Report can be generated as shown in FIG. 8 to profile a given client. Alternatively, the agency can generate a caseworker report as shown in FIG. 9 to compile total client contact information for a given caseworker ("John"). Client-specific reports can be generated such as that shown in FIG. 10, which is the result of a query of client and barrier data presented as the statistics for reducing a given Barrier (here job satisfaction). Further, job placement reports, client employment history reports, and other client-oriented reports can readily be generated by the appropriate queries.

20 More importantly, the Progress Element and/or Barrier data can be effectively queried and presented for the benefit of the caseworker and/or caseworker-assessment by the agency. For example, as shown at step 600 (Fig. 1) the caseworker may seek a client-centric "Efforts to Outcomes" report which details clients in the system for at least 6 months who had more than 2 hours of "Retention" conversations with a casemanager. FIG. 11 is an example "Efforts to
25 Outcomes" report which details (for each client) Possible Months Employed, Total Months Employed, Total Number of Contacts, Total Duration of Contacts, and Total Duration of

5 "Retention" Contacts. Summary information is tabulated, and this includes average Job Retention Rate (81.46%), Average Contact (3368 Minutes), Overall Job Retention Rate of all students (69%), and Average "Retention" Contact (512.1 Minutes).

10 Alternatively, as shown at step 700 (Fig. 1) the agency may seek a caseworker-centric "Barrier Reduction Report" which details caseworker success with clients to help them overcome the barriers they face. FIG. 12 is an example "Barrier Reduction Report" report which details (for one or more caseworkers) each Barrier faced, the caseworker's Efforts Against Barriers, Severity of the Barrier, Start Date, and Time in Program (both days and weeks). The foregoing data is tabulated and a summary listing is provided which includes Successful Client Barrier Reductions (1), Total Work Against Client Barriers (75 Minutes, 1.25 Hours), Number of Client Contacts (2), Successful Client Barrier Reductions (5), Total Work Against Client Barriers (782 Minutes), and the total Number of Client Contacts (16). This form of report ensures that the agency can provide caseworkers (or caseworkers can provide the agency) with quantitative accountability for social services based on objective reduction of barriers.

20 The above-described method is implemented as software, and preferably "network software" designed to operate in the context of a local-area or distributed network that affords a multiple-user environment. The software is best configured as a true client-server application. This makes the software scalable in response to network expansion as well as capable of providing client data to different client-side applications without server-side reconfiguration. The server software runs on Microsoft SQL Server, including SQL 2000. The client software runs under Microsoft Windows 98, Windows NT, Windows 2000, XP or the like. The software can be installed on any network hardware that is supported by Microsoft Windows 98/NT/2000/XP,

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5 including Ethernet or token-ring hardware using NetBEUI, IPX, or TCP/IP protocols. For
example, the method may be implemented over a 10-megabit Ethernet network using a 266-MHz
single-processor Pentium server with at least 64 megabytes of RAM, and modest client-side
machines (for example, a 100-MHz Pentium with at least 16 megabytes of RAM. The user
interface is preferably a conventional color monitor, a dial-up or network connection, and a
10 standard input device such as a mouse and keyboard. All data entry forms may be maintained on
a designated internet server for user access. In any of the foregoing operating systems, the
software may be incorporated as a program shell around existing relational database software
such as, for instance, Microsoft Access (graphical database access), thereby providing built-in
interoperability with peripheral programs such as Microsoft Word (word processor), Microsoft
Excel (spreadsheet), and Microsoft Exchange (email server), etc. In operation, the present
software provides a user interface that is simple and uncluttered. Typical user-interface response
time is 0.5 seconds or less. Typical database response time (for data transfers between a client
computer and the database server) is 2-3 seconds. Of course, performance will depend on the
speed of the computer hardware and network.

20 The system described above (inclusive of hardware and software) provides for the
tracking and assessment of social services based on a defined list of client barriers to success,
and objective tracking of progress of the social worker based on the reduction and/or elimination
of those barriers. The resultant information helps manage and coordinate resources for the
achievement of optimal clinical and financial patient outcomes, and to facilitate collaborative
25 patient care management across the continuum of available social services.

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Having now fully set forth the preferred embodiments and certain modifications of the concept underlying the present invention, various other embodiments as well as certain variations and modifications of the embodiments herein shown and described will obviously occur to those skilled in the art upon becoming familiar with said underlying concept. It is to be understood, therefore, that the invention may be practiced otherwise than as specifically set forth

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in the appended claims.

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